

SECTION 3. DESIGN SUBMITTALS AND REVIEWS

3.1 SUBMITTALS: Required submittals will be identified in the "SCOPE" or RFP. Refer to the "Design Phase Submittal Chart" in Appendix L. Generally, the following submittals are required:

- a. O&M: 100% and final (60% for complex or large projects).
- b. MILCON: Concept, 60%, 100%, and final.

3.1.1 Schedule for Submittals: The time allowed for each submittal from the contract award date and the number of copies required for each submittal will be indicated in the "SCOPE." Meeting established submittal schedules is essential. Late submission of the documents jeopardizes the design or construction contract award. Notify the PDE, at the earliest possible date if a submittal due date will not be met.

3.1.2 Pre-Design Meeting. The design team should meet with PACNAVFACENGCOM PDE, prior to the start of design. Meeting length and participants will be determined by PDE. As a minimum, the meeting will include the PDE and Prime A-E.

3.1.2.1 Functional Analysis Concept Development (FACD).

a. An FACD study is usually the first step in design development of a project after it is authorized for final design. FACD services can range from obtaining consensus on project functions and goals to complete project design. FACD studies on major projects normally involve concentrated on-site work sessions with the facility operator, design team, base engineering, utility provider and PACNAVFACENGCOM representatives to define the project's functional requirements, verify project scope and develop a schematic design. Topographic survey, geotechnical investigation, site verification, environmental (permit) restrictions, and identification of all utility connection requirements may be part of the FACD process. The A-E shall coordinate the level, planning and execution of the FACD with the PDE.

b. The scope of work and concept design developed and approved during the FACD process formulate the partnering agreement between PACNAVFACENGCOM, the user and host activity, and other stakeholders in the project. These agreements shall serve as the basis for follow-on design development. The A-E shall comply with requirements depicted in the FACD documents to the greatest extent possible. Any deviation from the FACD requirements shall be documented by the A-E along with justification and submitted to the PDE at the earliest stage for resolution with the customer and PM. As part of the final design submission, the A-E shall provide written certification that all FACD requirements have been incorporated, or addressed as deviations and amicably resolved.

3.1.3 Value Engineering (VE): Public Law and NAVFAC policy require that value engineering be applied to all projects with a construction value of \$1 million or more unless: 1) the facility will be procured with an

incentive type contract or that the Design Director evaluates and documents that the value engineering study is expected to cost more than 10 percent of the project savings. FACD studies that evaluate alternate systems and document the design and cost components of that evaluation can meet this VE requirement. The A-E shall coordinate the VE requirement with the PDE.

3.1.4 Concept Submittal: May be required. The design concept shall include as applicable to the project, but not be limited to:

a. Executive Summary of user approved scope and design concept. Summarize functional requirements.

b. Basis of Design.

c. Cost Estimate and Back-up Data and Statement of probable cost for the construction of the proposed facility as compared with historical cost data for similar construction in the same geographical area.

d. Site plan showing building footprint on contoured base map. Indicate all utility lines and new utility connections, access roads, paved areas, vehicular and pedestrian circulation paths, and existing adjacent structures.

e. Floor Plan. List of all rooms and spaces required for the facility. Indicate net square foot area for each room/space. Indicate total gross square foot area of the facility as proposed by the design. Scaled freehand floor plans/drawings. Label all rooms/spaces. Show furniture and collateral equipment layout. Separate drawings as required for larger projects.

f. Scaled freehand building elevations. Indicate materials, finish, and texture of envelope.

g. Perspective sketches which show all four sides of the facility. Sketches must show proposed form, colors, and materials to be used.

h. Design Quality Control Plan (DQCP) requirements as per paragraph 3.2.1.

3.1.5 60% Submittal (Optional): Include as applicable to the project:

- Drawings
- Specifications
- Basis of Design
- Design Calculations
- Preliminary Cost Estimates
- Furniture Layout
- Collateral Equipment List
- OMSI Outline
- Soil Investigation Report
- Review Comments and Markup of Conceptual Design
- DQCP Requirements as per paragraph 3.2.1

3.1.6 100% Submittal: Include as applicable to the project:

Drawings: Complete with NAVFAC Dwg. Nos.; CADD files; and hard copies.

Specifications: Complete with cover sheet; and hard copies printed from PDF (Portable Document Format) files. SPECSINTACT files converted to PDF with bookmarks and visual thumbnails.

Project Information Form (completed by A-E and PDE)

Basis of Design (if not revised from the 60% stage, state on cover sheet)

Design Calculation (if not revised from the 60% stage, state on cover sheet)

Cost Estimates

Collateral Equipment List (if not revised from the 60% stage, state on cover sheet)

Furniture Layout

OMSI Outline (Refer to UFGS-01781 and CCB (OMSI SOW))

List of Submittals Required in Project Specifications (Appendix J)

List of Submittals Required for PCAS (Appendix J)

Critical Items Summary

Recommendations on Field Consultations

Construction Schedule (Simplified Critical Path Method, Bar Graph, or other required method)

Soil Investigation Report (if not revised from the 60% stage, state so on the cover sheet)

Review comments and marked review copies of the 60% submittal

Design Review Checklist and Redicheck Coordination Review Checklist (Appendix I)

Bid Items

Preliminary Hazard Analysis Worksheets (Design A-E comments in The "status" column) (See PACDIV DPM408)

DQCP Requirements (paragraph 3.2.1; including but not limited to Quality Check-Set and Checklists)

3.1.7 100% Review Conference: Copies of the A-E list of issues and the review comments with the A-E's annotations will be made available to anticipated attendees.

3.1.8 Final Submittal: Include the originals as applicable to the project:

Final Submittal:

1) CD-ROM with Design files:

a) Directory Structure. The CD-ROM shall have separate directories for the AutoCad files, SPECSINTACT files and Backup design files. The Directories shall be named DWGxxxx, SPCxxxx, and BACKUP. Where "xxxx" are the last four digits of the contract number.

b) The DWGxxxx directory shall have sub-directories for each discipline.

c) The Discipline directory shall have a sub-directory for AutoCad external reference files. The directory shall be named "XREF".

d) The "BACKUP" directory shall contain PDF files of pertinent backup design files including but not limited to:

- Basis of Design
- Design Calculations
- Class I ODS Certification
- Collateral Equipment Lists
- Cost Estimates

2) CD-ROM with Signed Drawing PDF and Signed Spec PDF files:

a) Directory Structure. The CD-ROM shall have separate directories for the drawing PDF files, and specs PDF files. The Directories shall be named DWGxxxx, and SPCxxxx. Where "xxxx" are the last four digits of the contract number.

b) The "DWGxxxx" directory shall have sub directories for each discipline.

c) Specifications: Convert the signed specifications to PDF compatible with Adobe Acrobat Version 5.0. Produce individual files for each specification section and then combine to form one specification PDF file. Scan the signed specification cover sheet and pages that are not generated from SPECSINTACT, convert to PDF and insert into the specification PDF file. Bookmark the entire specification PDF file to index the first page of each section.

d) Project Drawings:

1. Convert PDF files directly from AutoCADD 2000. PDF files shall be compatible with Adobe Acrobat Version 5.0.

(a) Draw form shall incorporate standardized vertical title block designed for electronic signatures.

(b) PDF files shall be printed directly from AutoCADD 2000. (Use PC3 file and CTB file provided by PACDIV).

(c) Bottom boundry of PDF files shall be .75" from edge of title block.

(d) Left boundry of PDF files shall be .75" from left edge of title block.

2. Combine individual PDF files to produce one PDF file for the entire drawing set.

3. Bookmark each discipline and sub-bookmark each drawing.

4. Use the DeSign software to sign the PDF drawing file.

(a) "Submitted by" block across all sheets signed by the Prime.

(b) First sheet of each discipline signed over the professional stamp.

e) PDF files shall not be locked.

Project Information Form (completed by A-E and PDE)

Cost Estimates

Basis of Design

Design Calculations

Class I ODS Certification

Collateral Equipment List

Furniture Layouts

Soils Investigations

Field Notes (including surveying field books) (original)

Topographic Work Sheets (original)

Survey Computations

Review Comments and Marked Copies of the 100% Submittal

Design Review Checklist and Redicheck Coordination Review Checklist

(formal design quality checklist) (Appendix I)

All Borrowed Material

Bid Items

Preliminary Hazard Analysis Worksheets (include added column

designated as "Construction Status"

DQCP Requirements as per paragraph 3.2.1; including but not limited to

Quality Control Certifications for all Final documents and cost estimates submitted

3.1.9 Amendments to the Solicitation. Submit all amendments in Adobe Acrobat PDF. For amendments with electronic digital data or sets of files less than or equal to three (3) megabytes, the electronic digital data and files may be provided on 3 1/2-inch high-density floppy disks, zip media, or on CD-ROM in the International Standards Organization (ISO)-9660 format. For amendments with electronic digital files or sets of files larger than three (3) megabytes, provide the electronic digital data and files on zip media or CD-ROM in the International Standards Organization (ISO)-9660 format. Provide all files uncompressed.

3.1.10 List of Construction Contractor Submittals: Provide a list of the shop drawings, brochures, samples, and other items which are listed in the project specifications for submittal by the construction contractor with recommendations as to which items should be reviewed by the QC representative (if a QC project), the A-E, and the Government.

3.1.10.1 Submittal List in Project Specification:

a. Construction Quality Control Project. Identify either Government Approved or Contractor Approved only (Appendix J).

b. Government Approved: Administrative items and items which require user review or selection, such as door keying schedules, color samples, carpet, wall paper, etc. Also, items that are of significant cost, extremely critical or complex, or are considered an extension of the design, should normally be indicated for approval by the Government. Includes items where the approver would require a knowledge of the design assumptions and calculations. Only a minor percentage of the overall number of submittals should fall in this category.

c. Contractor Approval: All other items not identified as Government approved above. NAVFAC Specification Section 01450, "Quality Control" provides guidance on additional Contractor submittal reviewers, other than the QC Manager. Fire protection submittals require approval by a U.S. Registered Fire Protection Engineer. Coordinate the requirements of the Quality Control Manager's qualifications, duties and staff with PACNAVFACENGCOM CAP05 because this will influence what qualifications would be required of additional Quality Control staff besides the Fire Protection Engineer. Generally, most of the submittals would be reviewed by the Contractor's Quality Control staff.

3.1.10.2 Submittal List for PCAS:

a. Construction Quality Control Projects. The same list as paragraph 3.1.10.1 should be used except additional items recommended for A-E review will be identified. This listing is subject to review and approval by the PDE. A-E will generally review items to assist the Government in Quality Assurance. The Government provides the "official" approval of these A-E reviewed items that are of significant cost, extremely critical or complex and included in the critical items list. Include items that would require a knowledge of the design assumptions and calculations. Only a minor percentage of the overall number of submittals should fall in this category. (Appendix J except modified to indicate which items are to be reviewed by A-E.)

b. Government Review and Approved: Administrative and selected fire protection items, and items which require user review/selection, such as door keying schedules, color samples, carpet, wall paper, etc. will be reviewed and approved by a Government representative vice the A-E.

3.1.11 Critical Items Summary: Provide narrative description of those items and construction sequences which are critical to the successful completion of the project, and therefore, should be given the ROICC's special attention during construction. Each item shall be identified by specification paragraph and drawing number/detail as appropriate so that Government representatives can properly identify it. Generally a project should have 5 or more items that are considered critical. A-E shall perform a coordination check of critical items to compare the biddability of plans and specs. Items such as hard rock, storm water runoff, safety, etc. (See Appendix J for samples.)

3.1.12 Recommendations on Field Consultation: Provide a list of those items of construction for which field consultation of the A-E is recommended. The list should include sophisticated, unique, specialized, nonstandard and critical items of construction critical to the successful completion of the project; items which have a high potential for latent defects or which because of failure would have a high impact on the operation, function, system, structure or equipment. (See Appendix J for samples)

3.1.13 Other Submittals: The basis of design, calculations and soils studies shall be legible, neatly bound and indexed. Include the A-E's name, the project title and the construction contract number on the cover. Clearly state design data and cite reference sources when unconventional design methods or formula are employed.

3.2 PACNAVFACENGCOM DESIGN QUALITY ASSURANCE PROGRAM: The contractual obligation of the A-E to provide professional quality, technical accuracy, and coordination of all designs, specifications, cost estimates, studies and other services is extremely important and has far reaching consequences. Ambiguity, omissions, and uncertainties on construction contract drawings, specifications and other technical documents generally

result in higher awards and construction modifications. Liability for design errors and omissions will be pursued. An independent thorough check by the A-E shall be accomplished on all plans, specifications, cost estimates and other required technical data prior to any scheduled review. This independent quality control review shall be for the purpose of eliminating errors, omissions, interferences, and inconsistencies between all design disciplines and consultants; inconsistencies between drawings, specifications, and cost estimates; and for the incorporation of criteria, review comments and guide specifications, as appropriate. PACNAVFACENGCOM does not provide detailed checking or coordination services.

3.2.1 Design Quality Control Plan (DQCP). The heart of PACNAVFACENGCOM's design quality assurance program is the A-E's Design Quality Control Plan. It is the outline of how the A-E will ensure that the design fulfills our customer's functional requirements, meets the criteria, and depicts our customer's functional intent through carefully coordinated and completed drawings, specifications and other technical documents. The Command will review the plan. The DQCP outlines the A-E quality control (QC) process throughout the design for each specific project, and for each phase of work, from the FACD Submittal to the Final Design Submittal. As a minimum, the DQCP shall include the following:

a. The Project Title, Location, Customer Activity, P-Number or other Project Number, A-E Contract Number, Name of PDE, and Fiscal Year.

b. The specific method used to cross-check all of the various discipline/consultant's drawings to one another for completeness and accuracy at each submittal stage. This method should include a marking pen system which shall include a complete "Check-Set" of drawings, specifications, technical documents and cost estimate for the project. Mark this set as the "Quality Control Check-set". Utilize a color coding system indicating who and when checks are made in one color and who and when corrections are made and verified in another color (e.g. one checker can mark all errors or changes in red, another in blue, etc.; corrections can be highlighted in yellow; and cross check can be circled or highlighted in green.). After all "quality checking" is completed, the check-set with all correction marks, shall become part of the A-E's 100% submittal to the COMMAND. The check-set will be returned to the A-E prior to the Final Submittal. Rejection of the 100% submittal will require another quality check-set to be submitted.

c. The specific method used to cross-check the drawings, specifications, technical documents and cost estimates to each other for completeness and accuracy at each submittal stage. This method should include the marking system described above in paragraph 3.2.1.b.

d. The specific method used to determine the constructibility (e.g. Can Contractor construct as detailed (not detailed) in drawings or specified in specifications? etc.) of the facility as detailed in the drawings, specifications and technical documents.

e. The specific method used to determine the biddability (e.g. Can Contractor bid project? Does he have all the information required to provide a reasonable bid on a technical cost proposal? etc.) of the contract documents.

f. A combined or separate checklists covering the topics listed in above paragraphs 3.2.1 b, c, d and e.

g. The name of the principal or individual within the A-E firm responsible for quality control. This person shall be a third party and shall not be a member of the design team nor the principal responsible for the design project.

h. A separate checklist for items that should be researched during the field or site investigation efforts. This checklist should be almost completely checked off by the time the DQCP is submitted.

i. Quality Control Certifications shall be signed by an A-E principal certifying that Final Submittal documents have been quality checked and coordinated as per the DQCP (e.g. final cost estimates represent project requirements depicted in final contract documents i.e. drawings, specifications and other technical documents).

3.2.2 Quality Control Submittals: Three copies of the DQCP shall be submitted with the 10% submittal or no later than 10 days after the award of the design contract. The following are required design quality control submittals:

- a. DQCP field/site investigation checklist at 10% Submittal.
- b. DQCP Checklists at each submittal.
- c. DQCP Check-Set at each required submittal and mandatory at the 100% Submittal.
- d. DQCP quality control certifications for the drawings, specifications, cost estimates and other technical documents at the Final Submittal.

3.3 GOVERNMENT REVIEWS:

3.3.1 Reviews: Reviews of the A-E's work are made to insure that projects are developed in conformance with NAVFACENGCOM criteria, base exterior architectural plan, other applicable criteria; satisfy the functional requirements of the customer; and are within authorized scope and funds. A-E will modify preliminary and pre-final documents submitted in accordance with the PACNAVFACENGCOM comments or give reasons for noncompliance. Comment will be made on the submittals (marked-up drawings/specifications) and on PH-PACDIV Form 10-11012/4, Appendix I. Each Government review will contain review comments from various representatives. Separate forms for each reviewer's comments will also identify his/her name and telephone number. Should there be questionable comments, contact the reviewer for

clarification. Obtain approval from the PDE if any comment is to be disregarded. Government reviews do not relieve the A-E of the responsibility for the technical adequacy of plans and specifications. The Government will not provide a checking service for the A-E. The A-E shall check all elements of his own work prior to submission for Government review. Stated another way, the A-E remains responsible for any errors, deficiencies or inadequacies in the designs, drawings, specifications or other items or services furnished and shall be required to make necessary corrections at no cost to the Government. This A-E obligation continues even if the Government reviewed the A-E's work prior to such work being found to be in error, deficient or inadequate. Government review time required for review of each submittal will be given in the "SCOPE".

3.3.2 A-E Action on Review Comments: Incorporate the Government comments into the final design/project documentation or provide acceptable technical justification for comments not being incorporated. The A-E shall be responsible for the technical adequacy of any Government design review comments or suggestions made by the Government to the A-E design that the A-E incorporates into the A-E's design. After reviewing and incorporating all comments, return a copy of the comment sheet to the PDE, annotated in the right hand column to indicate action taken, as well as returning any marked sheets with annotated responses. Indicate by letter an explanation of any action not taken on the previous review comments and on any marked prints, estimates, reports, specifications, project documentation and/or annual inspection summary. Responses shall clearly and explicitly state what action is being taken to resolve the comment. The response shall as a minimum include one of the following four standard responses plus clarifying remarks explaining the rationale for the choice and actions taken or to be taken. (See Appendix I for a sample.)

- C - Concur (meaning that A-E concurs with the comment and is taking action to effectuate item).
- D - Do not concur (meaning that the A-E does not concur with the comment and is not taking action to effectuate it and provides rationale why).
- W - Withdraw (meaning that as the result of discussion with the originator of the comment it was mutually agreed that this comment conflicts with another comment and that this comment has been withdrawn by the originator. Annotate Government representative concurring, date, and other pertinent information).
- R - Resolve and respond (meaning that resolution of this comment requires further investigation by the A-E and that a response by the A-E will be provided at the earliest possible opportunity).

3.3.2.1 Submission of Annotated Review Comments: To facilitate our review of your comments, separate each Government reviewer's comments (with your annotated action comments) for distribution within PACNAVFACENGCOM to the applicable reviewer.

a. Print legible (typed or handwritten) comments on one side only, full size (not reduction).

b. Place tabbed dividers between each review, including reviews by different persons of the same discipline or Branch in PACNAVFACENGCOM. Do not combine reviews.

c. Place comments exceeding 20 sheets in folders with fasteners.

3.3.2.2 Identification of A-E Taking Action on Comments: With each discipline's annotated action comments, by prime A-E or subconsultant, include the A-E's name and telephone number. This is to facilitate contact with the person who took action on the Government's review comments.

3.4 DELIVERY OF SUBMITTALS:

3.4.1 Review Copies: When identified in the "SCOPE" provide copies directly to the activities and ROICC using the transmittal form letters shown in Appendix K.

3.4.2 Originals: Hand deliver the original documents to the PDE or forward by registered U.S. mail, or air courier services unless identified otherwise by the "Scope."